

We claim:

1. An optical element for an optical data transfer device, said optical element comprising an optical glass with an index of refraction (n_d) that is greater than or equal to 1.70, an Abbé number (v_d) that is greater than or equal to 35 and a density (ρ) that is less than or equal to 4.5 g/cm³.
2. The optical element as defined in claim 1, wherein said Abbé number (v_d) is greater than or equal to 40.
3. The optical element as defined in claim 1 or 2, wherein said density (ρ) is less than or equal to 4.3 g/cm³.
4. An optical glass for optical data transfer, said optical glass having an index of refraction (n_d) that is greater than or equal to 1.70, an Abbé number (v_d) that is greater than or equal to 35 and a density (ρ) that is less than or equal to 4.5 g/cm³.
5. A read-and-write device for optical data transfer, said read-and-write device comprising an optical glass with an index of refraction (n_d) that is greater than or

equal to 1.70, an Abbé number (v_d) that is greater than or equal to 35 and a density (ρ) that is less than or equal to 4.5 g/cm³.

6. The read-and-write device with a movable read-write head and at least one optical element, said at least one optical element comprising an optical glass with an index of refraction (n_d) greater than or equal to 1.70, an Abbé number (v_d) greater than or equal to 35 and a density (ρ) less than or equal to 4.5 g/cm³.

7. An optical glass having an index of refraction (n_d) greater than or equal to 1.71, an Abbé number (v_d) greater than or equal to 39 and a density (ρ) less than or equal to 4.7 g/cm³, wherein said optical glass comprises (in percent by weight on an oxide basis):

La ₂ O ₃	30 to 45
B ₂ O ₃	30 to 40
PbO	0.1 to 5
MgO	0 to 8
CaO	0 to 8
SrO	0 to 8
BaO	0 to 8
ZnO	1 to 10
TiO ₂	0 to 5
ZrO ₂	1 to 10

Y_2O_3	1 to 8
Yb_2O_3	0.1 to 5
Gd_2O_3	0.1 to 5
Nb_2O_5	0.1 to 10
With $\text{MgO} + \text{CaO} + \text{SrO} + \text{BaO}$	0 to 10

8. An optical glass having an index of refraction (n_d) greater than or equal to 1.71, an Abbé number (v_d) greater than or equal to 39 and a density (ρ) less than or equal to 4.7 g/cm^3 , wherein said optical glass comprises (in percent by weight on an oxide basis):

La_2O_3	30 to 45
B_2O_3	30 to 40
PbO	0.1 to 5
MgO	0 to 8
CaO	0 to 8
SrO	0 to 8
BaO	0 to 8
ZnO	1 to 10
TiO_2	0 to 5
ZrO_2	1 to 10
Y_2O_3	1 to 8
Yb_2O_3	0.1 to 5

Gd_2O_3	0.1 to 3
Nb_2O_5	2 to 10
With $\text{MgO}+\text{CaO}+\text{SrO}+\text{BaO}$	0 to 10

9. An optical glass having an index of refraction (n_d) greater than or equal to 1.71, an Abbé number (v_d) greater than or equal to 39 and a density (ρ) less than or equal to 4.7 g/cm³, wherein said optical glass comprises (in percent by weight on an oxide basis):

La_2O_3	32 to 42
B_2O_3	30 to 40
PbO	0.5 to 4
MgO	0 to 8
CaO	0 to 8
SrO	0 to 8
BaO	0 to 8
ZnO	2 to 8
TiO_2	0 to 2
ZrO_2	3 to 10
Y_2O_3	1 to 5
Yb_2O_3	0.5 to 2
Gd_2O_3	0.1 to 3
Nb_2O_5	4 to 10
With $\text{MgO}+\text{CaO}+\text{SrO}+\text{BaO}$	0 to 10

10. An optical glass having an index of refraction (n_d) greater than or equal to 1.71, an Abbé number (v_d) greater than or equal to 39 and a density (ρ) less than or equal to 4.7 g/cm³, wherein said optical glass comprises (in percent by weight on an oxide basis):

La ₂ O ₃	35 to 50
B ₂ O ₃	30 to 40
SiO ₂	0 to 8
GeO ₂	0.1 to 15
MgO	0 to 5
CaO	0.1 to 7
SrO	0 to 2
BaO	0.1 to 7
ZnO	0 to 5
ZrO ₂	0.1 to 8
Y ₂ O ₃	0.1 to 6
Gd ₂ O ₃	0 to 5
Nb ₂ O ₅	1 to 10

11. An optical glass having an index of refraction (n_d) greater than or equal to 1.71, an Abbé number (v_d) greater than or equal to 39 and a density (ρ) less

than or equal to 4.7 g/cm³, wherein said optical glass comprises (in percent by weight on an oxide basis):

La ₂ O ₃	38 to 48
B ₂ O ₃	30 to 40
SiO ₂	0 to 5
GeO ₂	0.5 to 13
With SiO ₂ +GeO ₂	5 to 13
MgO	0 to 2
CaO	0.1 to 5
SrO	0 to 2
BaO	0.1 to 5
ZnO	0 to 3
ZrO ₂	0.5 to 6
Y ₂ O ₃	0.1 to 4
Nb ₂ O ₅	3 to 7

12. The optical glass as defined in claim 8, 9, 10 or 11, further comprising Al₂O₃ in an amount of from 0 to 5 percent by weight, based on oxide content, and at least one alkali metal oxide selected from the group consisting of Li₂O, Na₂O, K₂O, Rb₂O and Cs₂O, and wherein said at least one alkali metal oxide is present in an amount of from 0 to 10 percent by weight, based on oxide content.

13. The optical glass as defined in claim 8, 9, 10 or 11, further comprising at least one alkali metal oxide selected from the group consisting of Li_2O , Na_2O and K_2O , and wherein said at least one alkali metal oxide is present in an amount of from 0 to 10 percent by weight, based on oxide content.

14. The optical glass as defined in claim 8, 9, 10 or 11, further comprising at least one alkali metal oxide selected from the group consisting of Li_2O , Na_2O and K_2O , and wherein said at least one alkali metal oxide is present in an amount of from 0 to 8 percent by weight, based on oxide content.

15. The optical glass as defined in claim 8, 9, 10 or 11, further comprising at least one ingredient selected from the group consisting of As_2O_3 , Sb_2O_3 , SnO_2 , CeO_2 , Cl^- , F^- , and SO_4^{2-} , and wherein said at least one ingredient is present in an amount of from 0 to 1.5 percent by weight and said amount for oxide ingredients is on an oxide basis.